BERKİN
ENGINEERING AZERBAIJAN LLC

INTERFACE AND ADAPTATION UNITS

PROGRAMMABLE INTERFACE AND ADAPTATION UNITS

SAMPLE
SELECTABLE PROTOCOLS

- HDLC
- NMEA
- STEP
- PULSE
- MODBUS
- RAW
- CUSTOM
- BINARY TCP
- UDP

PIU-0430

AAB-59

AUB-1002

SAMPLE SELECTABLE
INTERFACE STANDARDS

1x, 2x, 4x, 8x ve 36x Synchro - (115VAC - 400Hz, 90V L-L) - MIL-STD-1553 - RS-232/422/485 - ETHERNET - CAN BUS - STEP, PULSE, I2C-SPI

berkinengineering.az

INTERFACE AND ADAPTATION
UNITS

TECHNICIAL SPECIFICATIONS	PIU-0430	AUB-1002	AAB-59
Supply Voltage	115/220 VAC 50/60 Hz, 18-36 VDC	115/220 VAC 50/60 Hz	18-36 VDC
Power Consumption	60 W	50 W	75 W
Isolated Power Supply	√	√	√
Dimensions (WxHxL)	230 x 400 x 225	230 x 200 x 120	80 x 308 x 220
Weight	25 kg ±1.0	2 kg	12.1kg
Baud Rate	Up to 16 Mbit	Up to 16 Mbit	Up to 16 Mbit
Isolation Protection	5kVrms, ±15kV IEC ESD	5kVrms, ±15kV IEC ESD	5kVrms, ±15kV IEC ESD
Over Current Protection	√	√	√
Synchro Reference Signal	115V 400Hz	Optional	115V 400Hz
Ship Connector	MIL-STD-38999 MIL-STD-26482	MIL-STD-38999 MIL-STD-26482	MIL-STD-38999 MIL-STD-26482
Interface	30 x Synchro outputs, 4 x Synchro inputs 2 x Sitep inputs, 2x Pulse inputs 1 x MIL-STD-1553 Connector 26 x RS422 I/O signal ports 2 x Multifunctional Display Unit output 2 x RS422/RS232 I/O signal ports 2 x RS422/RS485 I/O signal ports 2 x LAN ports HDLC, NMEA, Custom Bınary, TCP/IP, Synchro, Step,Analog vb. IP65 -33°C ~ +63°C %95	RS232/422/485,GB Ethernet (Synchro Optional)	RS422/RS485,CANBUS, ETHERNET, SYNCRO (I/O) 1 x Pulse Input 1 x Step Input 2 x Relay 4 x Discrete Signal I/O
Protocol		NMEA , HDLC, UDP and custom defined	HDLC, NMEA, Custom Bınary, TCP/IP, Synchro, Step vb.
IP Class		IP67	IPX6 (ISO 20653:2013)
Operating Temperature Range		-33°C ~ +63°C	-33°C ~ +63°C
Operating Humidity		%95	%90

COMPATIBILITY

	PIU-0430	AUB-1002	AAB-59
Environmental	MIL-STD-810G	MIL-STD-810G	MIL-STD-810G
Conditions	MIL-HDBK-1472	MIL-HDBK-1472	MIL-HDBK-1472
Ergonomics EMI/EMC	MIL-STD-461	MIL-STD-461	MIL-STD-461 / NATO AECTP-500
Vibration	DOD-STD-167-1	DOD-STD-167-1	DOD-STD-167-1
Mechanical Shock	MIL-S-901D	MIL-S-901D Grade-A, Grade-II Type-A	MIL-S-901D Grade-A, Grade-II Type-A
Enclosure	MIL-STD-108	MIL-STD-108	MIL-STD-108
Power Supply	MIL-STD-1399 (STANAG 1008)	MIL-STD-1399 Part 300 (STANAG 1008	MIL-STD-1399 Part 300 (STANAG 1008)

Berkin Engineering without notice in product specifications reserves the right to make changes.

berkinengineering.az

PIU-0430

In the modernization of gyros like PL-41, LSR85, WSN-2, MINS or MK-39 as current and more sensitive gyros, allows communication between the new Gyro/ANS and synchro, HDLC.

3U CPU/IO Modules.

NAS, NTP Server, Synchro and I/O Diagnostics Units and Network Switches etc.

Serial/Ethernet Converters.

Redundant Power module. (110-220VAC/ 18-36VDC)

Software Gating Module.

By-Pass Circuit.

Display and Control Unit.

SELECTABLE **PARAMETERS**

Baud Rate - Data Areas - Input / Output Gates - Update Frequencies - Customized Data Field - Synchro Resolution - Frequency.

Programamable / Selectable input port.

Programmable / Selectable output port. Low latency (<500 us).

Sizeable and modular system.

Real time operating system.

Hot Swap

Customizable architecture independent from project Multi-function display support

Configurable software.

AUB-1002

The user provides data transmission at 100 Hz according to the system specific communication protocol by receiving position, speed, date, time information coming from GPS in RS485/RS422/RS232 formats and ROLL, PITCH and YAW(HEADING) angle information from GYRO with 512Hz HDLC.

Communication at 1G speed from Ethernet port to a GUI program in 200 µs creates instant graphics by sending platform data .

Simulated data transmission and software installation can be done through the GUI program.

Ability to combine all data obtained from all channels as a single message
Data transmission up to 10 Mbps

Real Time Operating System (RTOS)

FPGA based processing unit

AAB-59; converts the format of information received from sources such as GPS, Speed Log and DDU to a special specified protocol and sends it to INS and CDU systems.

It transmits the information received from INS to the ship platform as HDLC and Synchro with a specially determined protocol.

The Control and Display Unit (CDU) is in bi-directional with INS and AAB and performs the process of displaying all data in the system. CDU, can perform INS and AAB units configuration adjustments.

Softwarely adjustable synchro output speeds: 1x, 2x, 4x, 8x, 36x Synchro resolution 14 or 16 Bit.

In-Unit Test (IUT) feature.

In-unit constant testing (CIT).

Can be easily monitored and controlled through CDU-10.

Transmitting and receiving information received from data sources as Speed Log, DDU, External GPS via SYNCHRO, RS422/RS485, CANBUS, ETHERNET protocols

RS-422 HDLC interface in accordance with ISO 13239: 2002 standard

Audible and visual warning

RS422/RS485 redundant lines.

AAB-59

Digital/Synchronous Converter Unit:

Digital data reading resolution 14 or 16 bit

Synchro outputs 4 VA to power capacity

The update frequency of the digital data sent to the synchro module is 512Hz

Synchro output voltage level 90VAC line-to-line

Synchro Tracking Module:

Reads all synchro outputs for 500ms sequentially, checking that they produce operating status and correct output.

14 or 16 bit digital data generation resolution

Status and error indicator lights on the IU box

PLATFORM **MOVEMENTS**

Roll, Vertical Pitch, Yaw, Surge, Sway, Heave, Trim, Accelerometer Data, Pressure, Relative Wind Direction, Relative Wind Speed, True Wind Direction, True Wind Speed

AUB-1002
SOFTWARE FEATURES

It reads and processes position, speed, date, time information from RS232/RS422/RS485 and Ethernet interfaces.

It reads yaw, vertical yaw and heading information in HDLC format at 512Hz.

Read and calculated information separately or combined, from the desired channel, can be sent at the transmission speed and frequency.

Port configurations can be made via the web interface (option LCD touch screen),
Gyro and GPS priority selection can be made.

20 RS232/RS422/RS485 and 2 pcs Ethernet isolated input/output port (increasable)